

**Fig. 1.** Structure of penta-O-galloyl-D-glucose (PGG). PGG consists of a glucose core that is covalently linked to five gallic acids through ester bonds. With two possible configurations at carbon 1(\*) of glucose, two anomers of PGG exist. Computer simulated PGG conformations indicate that  $\beta$ -PGG may be more symmetrical (thus less polar) than  $\alpha$ -PGG.

WO 2004/009094

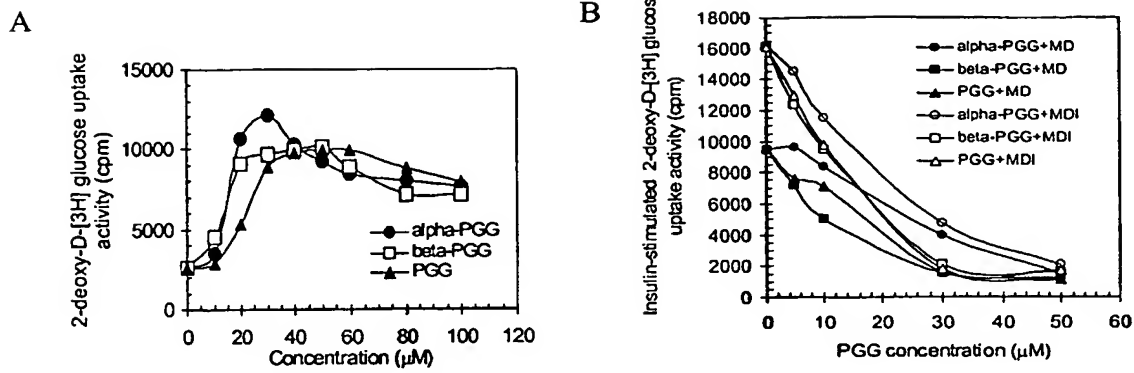


Fig. 2

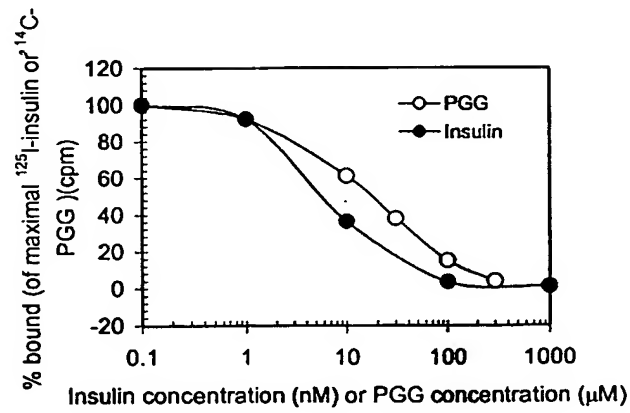


Fig. 3

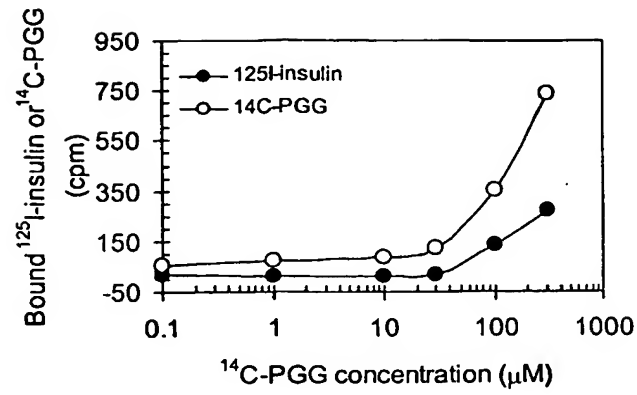


Fig. 4

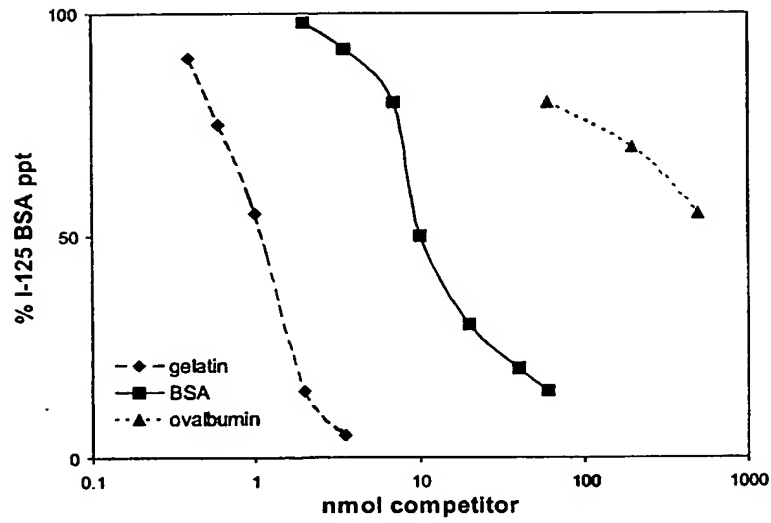


Fig. 5

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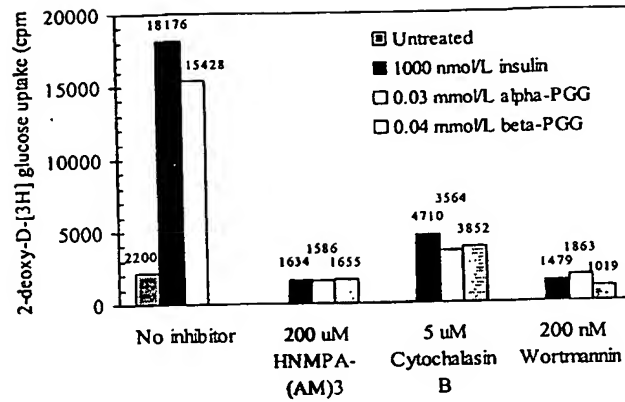


Fig. 6

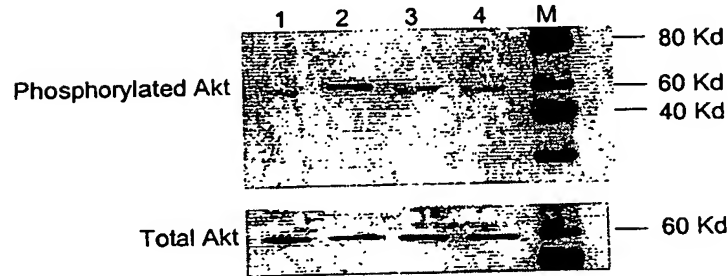


Fig. 7

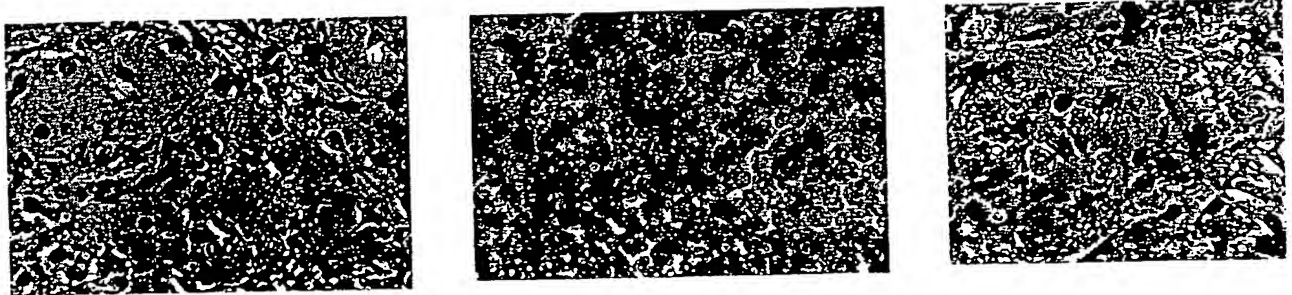


Fig. 8

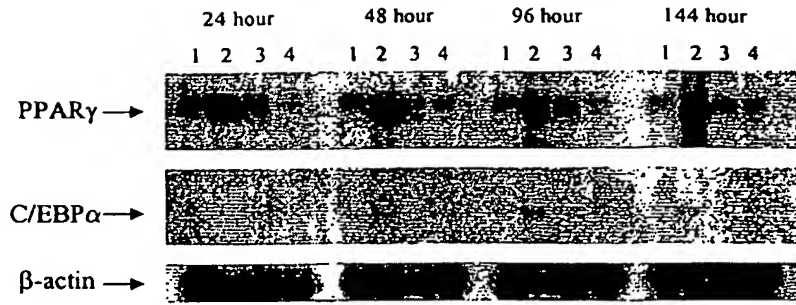


Fig. 9

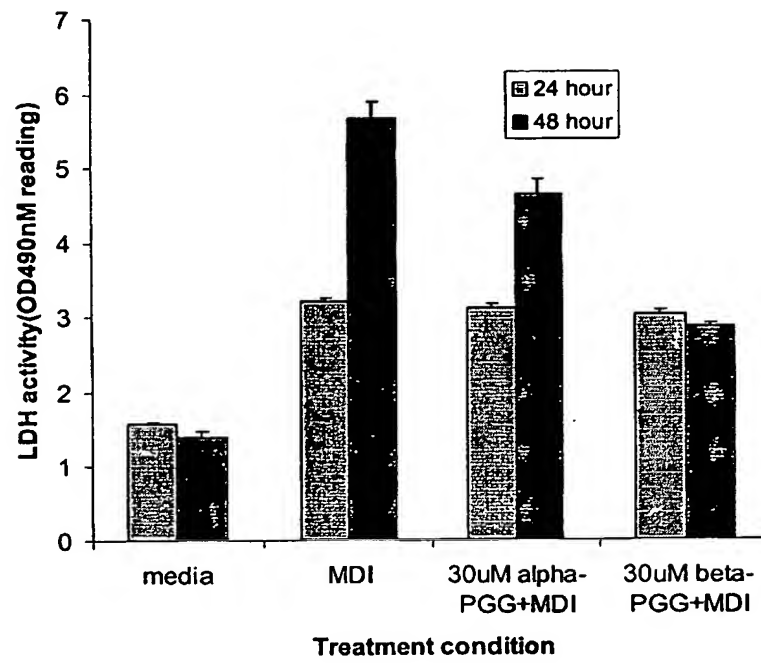


Fig. 10

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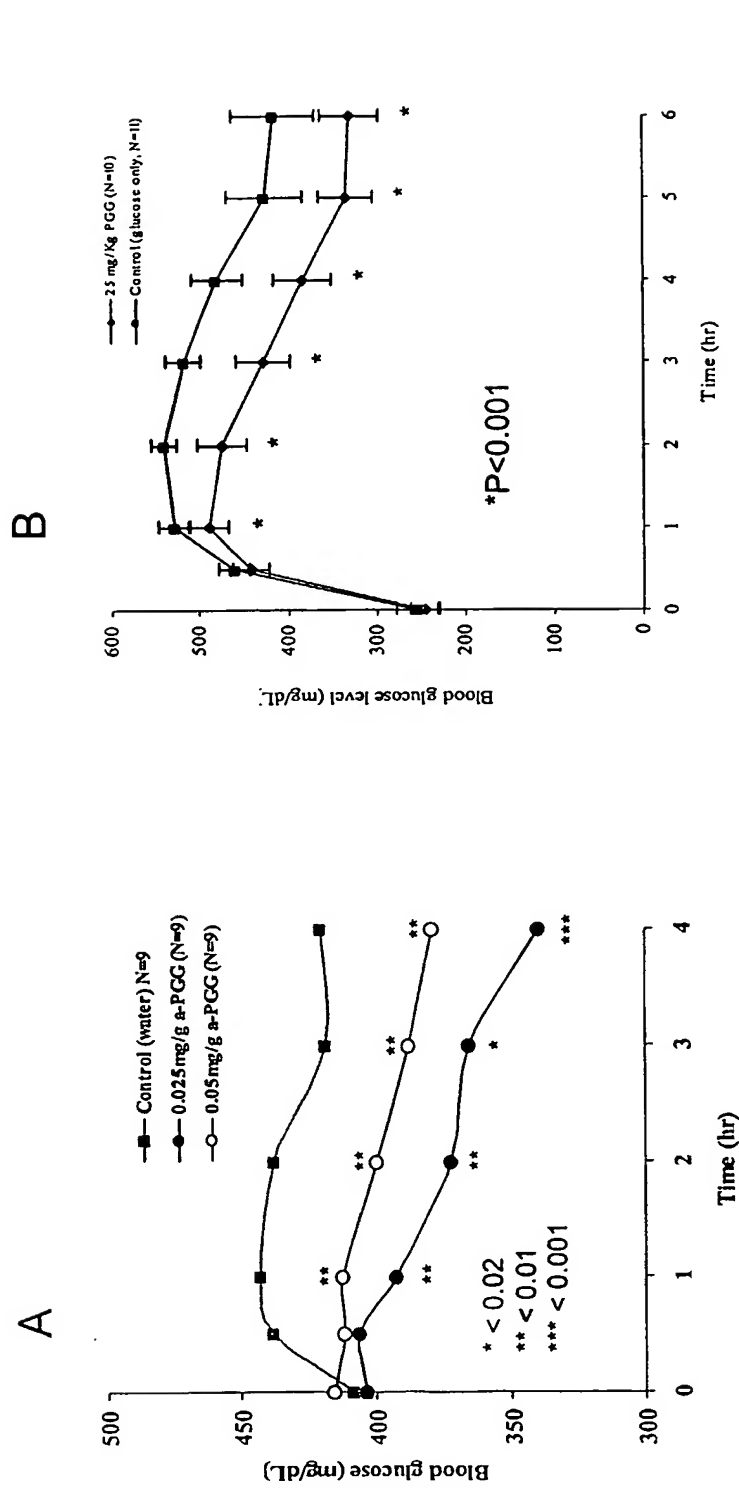


Fig 11. Hypoglycemic effects of PGG in db/db and ob/ob mice. Various doses of  $\alpha$ -PGG were orally delivered without glucose to db/db mice (A) or with glucose to ob/ob mice (B) mice. At different times post the delivery, glucose was determined in samples from tail blood.

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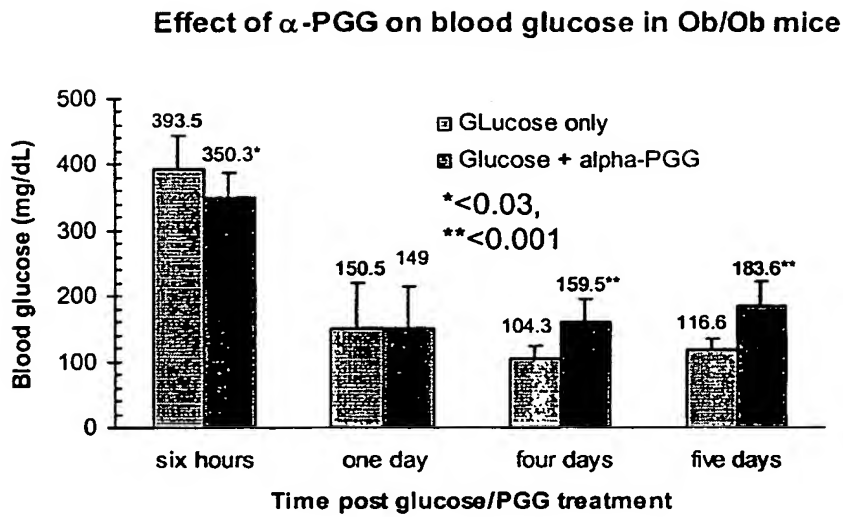


Fig. 12

WO 2004/009094

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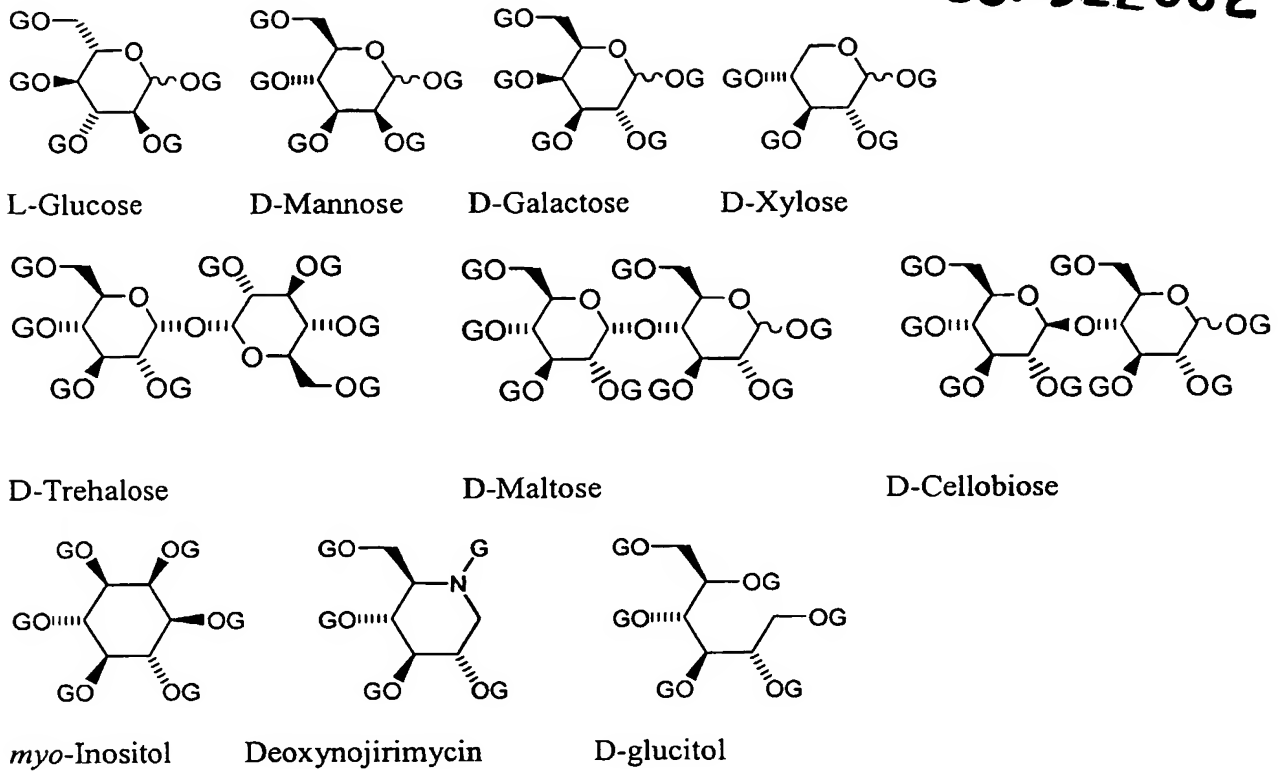
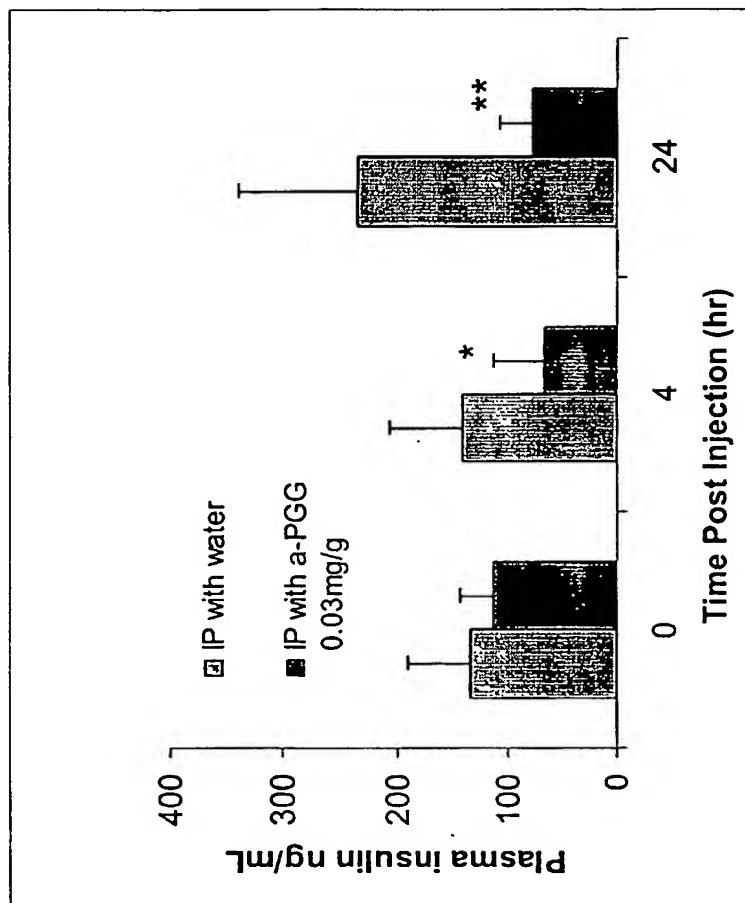


Fig. 13





**Fig 14.** PGG reduces plasma insulin levels in ob/ob mice.

Diabetic and obese ob/ob mice were injected i.p. with either water or α-PGG. Plasma from each mouse was isolated at various times post injection and was measured for insulin levels. \*  $P < 0.03$ , \*\*  $P < 0.005$ .

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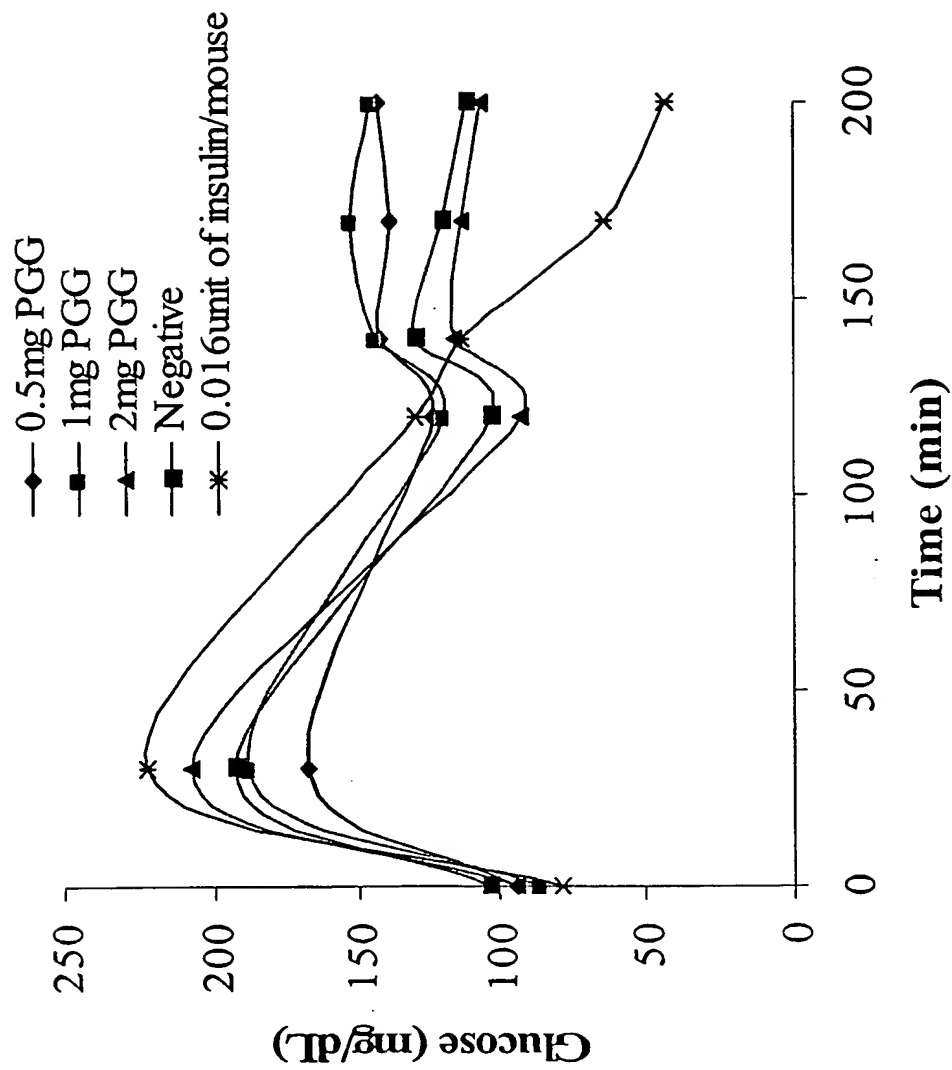


Fig. 15